AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): An integrated design system of an electric power steering apparatus in which a steering assisting force is given to a steering mechanism based on a current control value calculated from a motor current value detected by a motor current detection means, and a steering auxiliary command value calculated by a calculation means based on a steering torque and a vehicle speed, comprising:

a simulation controller;

an interface that is connected to said simulation controller;

an analysis tool of control system that is connected to said interface;

an analysis tool of motor electromagnetic field that is connected to said interface; and

an analysis tool of mechanism of vehicle that is connected to said interface,

wherein:

said interface has functions of standardization of data definitions, standardization of formats, and high speed communication of data, converts files of said analysis tool of control system, said analysis tool of motor electromagnetic field and said analysis tool of mechanism of vehicle into a readable common file, and produces an index array which explains a variable sequence,

said simulation controller controls and manages entire sequence by calling sub-routines through said interface, and carries out an integrated simulation of said electric power steering apparatus

~~for connecting an analysis tool of control system, an analysis tool of motor electromagnetic field and an analysis tool of mechanism of vehicle through an interface, and carrying out integrated simulation of said electric power steering apparatus.~~

2. (currently amended): ~~An~~ The integrated design system of an electric power steering apparatus according to Claim 1, wherein said integrated simulation of said electric power steering apparatus is carried out by

step 1:

first, said steering torque is given, a torque control of said electric power steering apparatus is carried out, a motor control is carried out, and a current output from a motor is detected;

step 2:

a motor analysis is carried out based on said detected current output, torque and voltage are calculated by said motor analysis, and said calculated torque and voltage are fed back to said motor control; and

step 3:

then, a mechanical system of said electric power steering apparatus is driven, a vehicle is allowed to run based on an output of said mechanical system, and characteristics obtained by said running of said vehicle are fed back to control of said electric power steering apparatus,

said analysis tool of control system is used in said step 1, said analysis tool of motor electromagnetic field is used in said step 2, and said analysis tool of mechanism of vehicle is used in said step 3.

data is exchanged among said three analysis tools through said interface~~controller controls and manages entire sequence by calling sub-routines through said interface~~.

3-6. (canceled).